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shade. All sponges are aquatic, and with few exceptions marine. They attach themselves to all manner of objects which may present a point of support, whether floating or fixed; some select their abode on very unexpected objects. In one case recorded in the "Natural History of British Sponges," by Dr. Johnson, a specimen belonging to the genus *Halichondria*, a sponge not uncommonly found on some of our coasts, was discovered growing from the back of a small live crab,—“a burden” says the learned Doctor, “apparently as disproportionate as was that of Atlas,—and yet the creature has been seemingly little inconvenienced with its arboreous excrescence.” The fresh-water sponge (*Alcyonella stagnorum*) is frequently to be met with floating in docks attached to logs of timber. It is very interesting to observe that these low organisms even seem to be attracted to each other, as it were in family groups. The *Alcyonellæ* live in groups of from ten to fifteen, and some sponges are so intimately connected as to be inseparable. Respecting their geographical distribution they are to be met with in all seas, and although they abound to a much greater extent in the tropics, even on the coast of Great Britain a great many species occur, nearly forty having been reckoned to belong to one genus alone.

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## RAMBLES IN FLORIDA.

BY R. E. C. STEARNS.

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### PART IV.

It was nearly noon of a delightful day in February when leaving the City of Tampa we crossed the Hillsborough River to the opposite bank for the purpose of visiting Rocky Point, which is situated upon *old* Tampa Bay; the route, for the greater part of the distance of seven miles, is through an

open forest of pines, of the species previously met with; the lack of undergrowth afforded pleasant and shaded vistas in every direction. In following the sandy road we waded through broad and shallow pools, miniature lakes made by the recent rains, in which we dipped our cans, and drinking found it more palatable than the water from the muddy springs we had just passed.

Upon both sides of, and a few rods from, the road are small deep ponds, covering perhaps an acre, surrounded with gaunt and leafless cypresses, *Taxodium distichum*, standing grim and naked in the midst of the forest; hoary, speechless giants, whose gnarled limbs seem to clutch at, while they sustain long drooping tufts of pendulous moss, that, in the sombre light, looked more like funeral emblems than living vegetation. Over these glassy lakelets the

“ \* \* \* \* \* towering boughs of the cypress  
Met in a dusky arch, and trailing mosses in mid air  
Waved like banners that hang on the walls of ancient cathedrals.  
Death-like the silence seemed, and unbroken save by the herons,”

many specimens of various species of which were seen slowly marching with solemn strides, like veteran soldiers, guarding the solitude of the forest.

Seating ourselves upon a fallen pine we halted to rest awhile, for walking is warm work on such a day. There are no wild flowers, and in many places no grass, for a fire, which the last rain only partially extinguished, burned even the scanty sod.

Again we started, and moving forward had proceeded but a few rods when up flew a wild turkey (*Meleagris gallo-pavo* Linn.), the only specimen yet met with by us in Florida, and farther on, but out of range, a flock of quails, *Ortyx Virginianus*. This species is quite pretty; in fact all of the quails are tidy-looking birds, but the Californians,\* with their plumed heads, rather lead the others.

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\* *O. pictus* Baird, and *Lophortyx Californicus* of Bonaparte, are common in the game season in the San Francisco markets, especially the latter species. They have, of late years, become more plentiful in California, though previously quite abundant. Their

The small hillocks of sand, of which we have seen at least a hundred since we left Tampa, are made by a species of Gopher (*Geomys pinetus* Raf.). The people call them Salamanders. The propriety of the name is not perceptible. Three or four species of *Geomys* are found in the Pacific States.\*

We have arrived at the edge of the timber; the road no farther winds beneath the shade of the forest, but lies broadly open to a burning sun. It follows for a short distance through a sedgy marsh, with a rank growth upon either side and terminates at a cluster of cabins, which stand upon the sandy margin of the bay.

The small rudely thatched buildings, are occupied by a number of workmen engaged in the manufacture of salt. Their apparatus is of the simplest description. It consists of a few kettles, or evaporators, made by cutting in halves, longitudinally, the shells or outer cylinders of small steam boilers, which are rudely set in masonry of stone and mud. Into these kettles the salt water is pumped by hand from a well-hole, a large pit dug in the sand, into which the water seeps, or flows. The evaporation is produced by means of a fire under the kettles; the inflammable pitch-pine making an admirable fuel for this purpose. The thatched cabins† of the salt makers were quite a novelty to us. They are fifteen to

increase is owing to two causes: the game-laws of the State protect them during the breeding season, and the extended settlement of the agricultural lands, leads to the extermination of those animals that prey upon them.

\*The Gophers make sad havoc in the suburbs of San Francisco, by cutting off the roots of rare plants in the flower beds, or by gnawing through the cabbage roots in the market gardens. As they work underground, they are not easily detected, though mercilessly hunted upon some occasions by the gardeners, who frequently use a trap to catch them. The Gophers have a pouch in each cheek, in which they can carry food to their burrows.

In an article entitled "South-Western Slang," published in the "Overland Monthly," Vol. III, p. 129, the writer says, "On account of the great number of Gophers in that State, and the former use of their skins for money, a Floridian is called a "Gopher."

In California, a man who practices deception, or acts in an underhanded manner, is sometimes called a "gophering fellow."

†These palmetto structures resemble the thatched cabins of the natives upon the Isthmus of Darien, which are seen by the traveller while crossing from Aspinwall to Panama.

twenty feet square, and about six feet high at the eaves, and the roof is sharply pitched so as to shed the rain rapidly. The frame is made of small poles or saplings, upon which the leaves of the palmetto are tacked or tied, course after course, overlapped like shingles or weather-boards upon a common house. Sometimes a floor is laid and a board door hung to the frame. An excellent shelter for a warm climate is thus made, sufficiently close for protection against ordinary storms, a good screen from the sun, and open enough to admit of ventilation. Exceeding caution in the use of fire is requisite, and cooking must be done outside, and at some distance away.

We were kindly furnished with food and lodging by our host, an old Scotch sailor, with a bushy beard which rivalled the Spanish moss in color and in length :

“Like a wolf’s was his shaggy head,  
His teeth as large and white;  
His beard of gray and russet blended;  
On his hairy arm imprinted  
Was an anchor, azure tinted.”

After boxing around the globe for a quarter of a century he finally drifted into this out-of-the-way corner of the planet. With a palmetto cabin, plenty of oysters, game and fish, he lives a free and easy life, with few luxuries and fewer cares: his gun and dog, his boat and fishing gear, supply both food and recreation; like most sailors and sportsmen, he is a good cook; as to his knowledge of the culinary art, inquiry is best answered by the repeated sorties made by us upon the well cooked rations. “Actions speak louder than words.”

From the salt works a trail leads across the sands, then through a bit of trampled marsh, over the sands again to shell-heaps large and small. There is only one of the heaps of sufficient size to be dignified by the name of mound; this latter covers an area of half an acre and is fifteen feet in height, at the highest point; it is composed entirely of shells; and the mound and heaps and ridges of shell, are,

perhaps, the remains of many feasts here enjoyed and celebrated by the tribe of which Hirrihigua\* was chief. From a well-hole that was dug to the depth of eight feet in the principal heap, arrowheads of chalcedony, a sinker of "coral stone," and a spoon-shaped implement† made from a piece of a large conch-shell, *Busycon perversum*, were obtained. Fourteen species of shells were collected of which nine are the same as found at the Cedar Keys Mounds, and include the species that are living most abundantly at the present day, and which were generally sought for as food by the aborigines; the other five species‡ are small shells, too small to be collected for the above purpose and were probably carried to the heaps, from their being attached to the shells of the edible mollusks. No fragments of pottery were detected, and nothing to indicate that the mound or any of the heaps were used for burial purposes; the ground outline of this series of heaps is quite irregular, and it appears rather to have been the result of accident than in conformity to any plan.

From the shell-heaps to the end of Rocky Point is at least a mile; the road or trail follows along the ridge, which consists of beach rubble and debris upon the top of an ancient coral reef; at many places as well as at the end of the point, the coral-rock crops out, and in some localities it is daily washed by the tide; at the water's edge are mangroves, and along the sides of the ridge are pines, palmettoes,§ and but-

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\*Irving's Conquest of Florida, Ed. 1869, p. 59.

†In the Ethnological department of the Smithsonian Institution may be seen (S. I. No. 5936) an implement from Chattanooga, Tennessee, collected by Mr. McRead, of the same form, and made of a piece of shell of apparently the same species.

‡One of these species, *Marginella conoidalis* Kiener, is quite numerous in Tampa Bay. I am inclined to believe that the so-called pearls that were seen by DeSoto and his men consisted in part of these shells; a bushel of the shells of this species in one pile was found at a depth of several feet below the surface, in the city of St. Louis, by Mr. T. T. Richards, specimens of which are in the collection of the Peabody Academy of Science. The locality was without doubt the site of an old Indian camping-ground or burial place.

§"This palm possesses a great, and to this country, an increasing value. It is the only tree produced in our forests which is not attacked by the *teredo navalis*, or ship worm, and as it is incorruptible in salt water, its value for submarine construction is almost incalculable; its leaves can be employed in the manufacture of hats, baskets,

tonwoods, and specimens of the Spanish bayonet (*Yucca*) trees frequently occur. Logs of the Pencil Cedar, that have drifted away from rafts, are lodged along the shore, or have been carried higher up by wind and tide; we turned many of them over and found numerous fine specimens of snails, *Helix volvoxis* and *Helicina orbiculata*, and a living scorpion. The spaces between the roots of the mangroves were filled with oysters which had also fastened to the roots, and a species of *Modiola*, closely resembling the common one, of the Atlantic coast, *M. plicatula*, but with somewhat finer sculpture, was abundant. The small oysters that are so common everywhere along the shore, growing near the high-water line, are not generally eaten except by the raccoons, hence the common name for them of "coon oysters." On the under side of detached lumps of these we found many rare little shells,\* and several of the larger species of mollusks† especially the thorny conch, *Melongena corona*, may be seen prowling around, or half buried in the sand, at the edges of the oyster bars. The last named species is a famous oyster eater; but the law of compensation here intervenes, for the animal of the thorny conch is in turn eaten by many kinds of fish, for which it is an excellent bait, and it is therefore much used by the fishermen; the gulf trout also collect them on their own account, and it is quite common to find large shells of this species in their stomachs.

The position of the sun told us that it was time to return; the heat was excessive, and constant tramping and stooping had made us tired.

Cutting a bunch of palmetto leaves to use as a screen for our heads we struck a bee-line back to the shell-heaps; half

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mats, and many other purposes of domestic economy, and the 'cabbage,' composed of the unexpanded embryo leaves may be classed among the delicious vegetables of our table; it is, however, a wasteful luxury as the tree always perishes when deprived of this part of its foliage." Elliott's Botany, vol. 1, p. 432.

\*A new species of *Pedipes*, a tiny shell only eleven hundredths of an inch in length, was found at Rocky Point; it is described by me in the Proceedings of the Boston Society of Natural History, vol. xiii, as *P. naticoides*; it is the first of the genus found on the eastern side of this continent.

† *Fasciolaria distans*, *Busycon perversum*; the latter not numerous at this place.

way between the latter and the point, there is a narrow lagoon with dead mangroves standing along its edge; here we found the screw-shaped shell, *Cerithidea scalariformis*,\* and the fine *Littorina angulifera*†, the latter on the mangroves high above the reach of the water; and on the grass, or slowly creeping on the surface of the wet sand, the coffee shell, *Melampus coffea*.‡ The *Cerithidea* is also found near the salt works, and *Littorina irrorata* can be gathered in quantities within a stone's throw of the buildings. On our way across the sand from the shell-heaps, an army of fiddler crabs hobbled aside, opening ranks to let us pass. After a hearty dinner we bade "ye ancient mariner" farewell, and making a straight wake, were at camp by dusk.

Remaining in Tampa for a few days awaiting the arrival of letters, and to complete our reconnoissance of the country in the immediate vicinity, we finally abandoned our headquarters, and bidding adieu to Camp Misery and its numberless fleas we placed our equipment on board of the schooner "Santa Maria, of St. Marks," a vessel of sixteen tons measurement, and cast loose from the wharf at Tampa at noon of a pleasant Monday in February, en route for Cedar Keys, to stop at such islands and points on the way as might be of interest. Proceeding down the bay we anchored near Ballast Point, and grappled up a goodly supply of oysters for the subsistence department, at the same time adding two

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\* A much larger (allied) species, *Pyrazus palustris*, which occurs in great numbers in the salt marshes of the Eastern Archipelago, is collected, and the animal eaten by the natives, who roast them and suck the contents of the shell through an aperture made by breaking off the apex of the spire. Vide H. & A. Adams, Genera of Recent Mollusca, Vol. I, p. 291.

† A species of *Littorina*, *L. obesa*, is used as an ornament by the natives of the South Sea Islands, and the animal of another species (*Littorina litorea* Linn.) is extensively used for food by the poor in Great Britain; thousands of bushels are annually collected for this purpose.

‡ A species of *Melampus*, *M. luteus*, is sometimes used to ornament the person by the natives of the Indo Pacific Islands, where this shell is found. In the Ethnological collection of the Museum of the Smithsonian Institution is a specimen (S. I. No. 3663) of a necklace from the King's Mill Islands, collected by the Exploring Expedition under Commodore Wilkes, which is made by weaving or winding eight rows of these shells around a central cord.



species of shells\* to our collection, which were found adhering† to the oysters.

From Ballast Point a few hours sail in a light breeze brought us to Piney Point, or Point Pinalles, the latter being the common name with the people here. Off this point there is comparatively deep water and a fair harbor; this place is believed by many to have been the anchorage ground of DeSoto's‡ fleet, three hundred and thirty years ago.

The historian says: "His squadron consisted of eight large vessels, a caravel and two brigantines, all freighted with ample means of conquest and colonization;§ besides the ship's crew his force numbered one thousand men with three hundred and fifty horses."

The fleet arrived at the mouth of Tampa Bay on Whitsunday, the twenty-fifth day of May, 1539; three hundred of his men disembarked on the following Saturday, and the remainder of the force landed on the succeeding day.

To the bay, De Soto gave the name of Espiritu Santo; the first detachment met with a rough reception, for on the morning after it landed the savages broke upon the Spaniards who were carelessly lying around, and with deafening yells drove them in confusion to the water's edge; the latter were speedily reinforced from the vessels and soon dispersed their foes.

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\* *Mytilus hamatus* Say, and *Odostomia impressa* Say.

† Memorandum for young collectors; always examine critically the outside of large or roughly sculptured shells, for by so doing many rare and valuable acquisitions are sometimes made; many of the smaller species can be obtained in no other way.

‡ After the failure of the Expedition of Pamphilo de Narvaer, Fernando de Soto next attempted to occupy the country, having sold his claims on the Peruvian Conquest in which he performed a prominent part, for an immense sum of money. This last expedition was undertaken by De Soto at his own expense. Landing on the shore of Tampa Bay with one thousand men, and assisted by Ortez, a survivor of the Narvaez Expedition, who was a favorite with a chief in the interior, he proceeded for some distance without serious opposition, treating the natives generally with kindness. He pursued his way through Florida, though bravely and powerfully resisted; after leaving what is now known as Florida, he met with and repulsed several bands of hostile Indians, and was ambushed by a numerous body which he defeated in a desperate conflict; led on by the hope of finding gold, he and the remnants of his army crossed the Cumberland Mountains and the Mississippi River, and it is supposed that he was in the neighborhood of the Red River in Arkansas, when, in the spring of the year 1542, he died of fever at the age of forty-two years.

§ Irving's Conquest of Florida, Ed. 1869, p, 56.

At Piney Point are numerous shell-heaps and mounds; they are covered with a dense vegetation; climbing over prostrate trees, or crawling upon hands and knees, through a tangled growth of vines and shrubs, we forced our way as best we could, from mound to mound, over ground rich with historic interest and upon a spot which had received the foot-prints of as brave and adventurous a band of men as have ever walked the earth. "If at times our feelings revolt at the outrages committed by them upon the poor Indians, and by their wrongs towards those native chieftains who fought and fell so heroically in the defence of their homes, yet our indignation passes away and is forgotten in the melancholy fate of the invaders. Scarce three years had elapsed from the time of their embarkation at Cuba, when nearly the whole train of youthful cavaliers had passed away; horse and rider alike had perished, and their bones lay bleaching midst the savage wilds of America!"\*

The mounds are crowned with magnificent specimens of the palmetto; in the vicinity may be seen the *Cerasus Caroliniana* or Wild Orange; also sycamores and pines. Various flowering shrubs and vines not in bloom at the time of our visit compose a part of the undergrowth. We were unable to obtain a sufficiently extended view by which we could form an idea of the relation of heap to heap or mound to mound, or ascertain whether any general plan had been pursued in their construction; the Floridians, residents of the neighborhood, believe them to be defensive works that were erected by De Soto; but we could perceive no basis for this belief, as the structures separately viewed are essentially the same as others we had examined.†

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\*Irving's Conquest of Florida, Ed. 1869, p. 447.

†In none of the mounds examined by us were found any ornaments for personal adornment made of shells. From mounds in other places in the Southern States articles for that purpose have been obtained. In the Smithsonian Institution, No. 1627 of the Ethnological specimens, is a pendant for a necklace or ear-drop made of a piece of a species of *Busycon* which was found in a mound in Texas; also in the same collection, No. 5311, is a roughly polished valve of *Unio gibbosus*? perforated, found near Sulphur Spring in the neighborhood of Nashville, Tennessee; No. 7654, also Smithsonian Col-

The account of the landing and movements of De Soto thereafter does not show that he remained at or near the place of debarkation, save but for a short time, for the purpose of giving his men a few days rest after the confinement of shipboard. If he had made this a base or point of support for subsequent operations it is probable that he would have caused earthworks to have been erected, but otherwise it would have been unnecessary and useless labor; as above stated there is nothing in the character of the mounds and heaps that show any difference from similar structures elsewhere met with by us.

This locality was undoubtedly the site of a populous Indian town; the ground in the neighborhood is rather above the average height, and the position such as to make it particularly healthful in the summer and autumn. The waters abound with fish at certain seasons, and the neighboring islands furnish abundance of oysters and other mollusks that were apparently considered edible by the Indians. Near this place, and inside of the keys, we gathered for our use as food, quantities of Quahaugs (*Mercenaria Mortonii* Conrad), of mammoth size and excellent quality; a pair of the empty valves sometimes weighing between three and four pounds! At low tide can be collected the reversed Conch (*Busycon perversum*) and the Horse Conch (*Fasciolaria gigantea*), of which it is supposed the Indians made their war-trumpets.\* Here also abound not only many smaller molluscos animals of sufficient size to be important for food, but the Thorny Conch (*Melongena corona*) elsewhere alluded to. The bleached shells of the species named are

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lections, is a convex disc of shell (species unknown) from a mound in Union County, Kentucky; this last was collected by my friend, Major S. S. Lyon, of Jeffersonville, Indiana.

\* Another large shell, the beautiful *Triton variegatum*, is used as a war-conch by the natives of many of the Indo Pacific Islands. See specimens in the Ethnological collection of the Smithsonian Institution (3825) from Carlshoff Island; (3466) Samoa Island, and (2907-8) Feejee Islands (called by the natives n-d-a-v-u-i). These specimens are a part of the material collected by the U. S. Exploring Expedition under Commodore Wilkes.

found in all of the Kjøekkenmøddings on the western coast of Florida, as far as we explored.

On some of the smaller islands the pelicans, gulls, and other maritime birds deposit their eggs, and on the larger keys raccoons and deer are abundant. The occasional visit of a Puma (*Felis concolor*) sometimes arouses the slumberous quietude of the isolated settlements; a quietude at the present day undisturbed by the war-whoop of the savage, and seldom broken except by the music of the mocking-birds, or the noisy screeching of the parrots (*Conurus Carolinensis* Kuhl). The great requisite for the sustentation of large numbers of barbarous people exist here now as they did centuries ago. Along the base of a ridge of shells, which is situated so near the edge of the bay as sometimes to be washed by its waves, we picked up several arrowheads and small fragments of pottery. About half a mile below a new settler had just planted his stakes and was building a cabin, his nearest neighbor resides two miles above. Driven from his native state by the rude and chilling breath of the north wind, and suffering from pulmonary troubles, he here seeks and will measurably find what Ponce de Leon sought, the "fountain of health," provided he does not succumb to the fever and ague, of which there is a chance. Near his new home there is a creek where alligators (*A. Mississippiensis* Gray) watch with jealous eyes the invasion of their domain. As the presence of the huge reptiles frightened the children when they went to the creek for water, one of our party proceeded to the spot and slaughtered a saurian some ten feet in length. We were told of cases where pulmonary patients "with one foot in the grave" and one hand upon the door knob, evaded eternity, at least for a term, by eating alligator meat; and alligator oil we were assured is a specific against pulmonary consumption. If the oil of the alligator has any connection with its power of extending the jaws, we have no doubt a moderate dose might enable the most despondent invalid to grin. Of one fact we are cer-

tain, they have no *ear* for music. A young living specimen, two feet long from snout to tip of tail, upon which we expended sundry vocal performances of a high order, manifested not the slightest appreciation, and we were never encored. Chagrined at the apathy of the audience we deliberately insulted it by reciting aloud, and in the most sarcastic manner, the following verse :

“How cheerfully he seems to grin,  
How neatly spreads his claws,  
And welcomes little fishes in,  
With gently smiling jaws.”

But the voracious beasts not only “welcome little fishes in,” but frequently attack dogs and pigs, and instances are known of their attacking children and men.

We remained within two or three miles of the mound anchorage for several days collecting along the shore, or in the lagoons and marshes. Provided with well greased long boots we waded for miles, and at low tide could have crossed from the main land to the opposite keys, so shallow is the water, had not a narrow but not deep channel prevented. Sometimes at night we slept by our camp fires ashore, or, according to the caprice of the moment, on board of the schooner, during the twilight spinning yarns or relating adventures in other places, or listening to the serenade of the drum-fishes swimming alongside, until sleep, “the giver of sweet visions, came.”

From Point Pinalles it is but a short sail to Long Key. Upon the easterly side of the latter we found many specimens of *Fasciolaria tulipa* and *F. distans*, but much handsomer shells of these species may be obtained upon the outer shore of the key; those from the inside are covered with a confervoid growth that is somewhat difficult to remove, and when clean the shells retain a green stain. The southerly end of this island is the best collecting ground; the beautiful Winged Conch (*Strombus alatus* Gmel.), the great Cockle (*Cardium magnum* Bom.), the heart-shaped Cockle (*Cardium isocardia* Linn.), a curious thorny Oyster

(*Chama arcinella* Lam.), and the fine bivalves *Callista gigantha* and *C. maculata*, and many other molluscan forms of interest and beauty are quite numerous. The water deepens rapidly upon the outside of the key, and many species may be found upon the outer beaches that are rarely met with on the shore of the main land. While walking near the edge of the water the surf rolled up a fine living specimen of the odd-looking trigonal Trunk-fish (*Lactophrys camelinus* DeKay), sometimes called Cow-fish, a profile view of the head much resembling that of a cow; and along the drift rows a few specimens of a Sea-cucumber (*Holothuria*), which look like an empty bead purse. There is a large species found in Puget Sound that is eaten by the Indians, and the *Holothuria edulis* is regularly collected by the Malays in great quantities, dried, and sold to the Chinese who regard it as a delicacy. We prefer broiled quails. Specimens of the switch-like Gorgonia (*Leptogorgia virgulata* M.-Edw.) are mixed in with the drift; and attached to the bases of many of the specimens is the queer Ark-shell (*Arca Noë* Linn.), called Noah's Ark; here also are large sponges, shaped somewhat like a vase. The business of sponge collecting is quite profitable. At the present time there is an increased demand for the coarser species, as, after proper preparation, it makes a most excellent filling for pillows and mattresses. The sponges furnish numerous microscopic forms of wonderful beauty, and fossil sponges are found in many of the geological strata in Great Britain.\*

Having added largely to our collection during our pleasant stay upon Long Key we again got under way, and early in the afternoon of a mild winter day we came to anchor in the pass at the end of Pine or Piney Key, and soon after went ashore. This little island is one of the most delightful spots on earth; it is covered with vegetation almost to

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\* While the green sand, the upper chalk, and the Kentish rag were forming, corals and sponges grew in every sea . . . . . The Brighton pebbles and the Wiltshire flints are principally petrified sponges . . . . . (Milton's "Stream of Life.")

the water's edge. It is encircled by an outer growth of mangroves. Pressing through these, and crossing to the opposite side of the key, we passed through successive zones of palmettoes, buttonwoods, etc., and intervals, where the rank grass is from three to four feet high; in one of these we made a camp, and all hands went vigorously at work cutting and hauling the boughs of dead fallen trees for our night fire. Quite near to the camp is a narrow bayou, which indents the shore so as to resemble a huge drumstick with the knob or head inland. At low tide this knob or head is separated from the other portion, or handle, by an oyster bar, from which we obtained a great quantity of delicious oysters of large size; here also we found many other species of mollusca, some of which are quite rare, including a beautiful cone-shell. The sandy part of the oyster bar, as well as the narrow beach, was closely dented with the hoof-prints of deer, and the footprints of "coons." In many places sturdy thistles, and cacti of large size, furnish a hiding-place for the snails, *Helix cereolus* and *H. uvulifera*, and the dense undergrowth a nesting-place for the birds. As the sun had sank so far below the tree tops as to shade our camping-ground we started our evening fire. Tramping and the salt sea-air gave a keenness to the appetite that caused the supper of stewed and roasted oysters to disappear in a marvellous short time. Having finished our repast we filled our pipes and from time to time piled fresh fuel on the fire and watched the flashing flames.

It was a brilliant night, serene and cloudless, and the moon was near the full. The buttonwoods and palmettoes glistened in the silver light which descended from above, and were tinged by the ruddy glow of our huge camp-fire which lighted them from below, making each tree in the foreground distinct in vivid lines of beauty; the dark recesses of the denser growth occasionally illuminated by a flame which streamed up for a moment and disclosed colonnades of pines and palms, standing equidistant and regular

as if placed by human hands. It required no flight of the imagination to transform these charming forest vistas into the long, dim, aisles of cathedrals; the trunks of the trees forming the pillars, and the graceful leaves of the palmetto, overarched, forming a roof.

"The groves were God's first temples."

We sat up late, enjoying the glories of the night, the last of our out-door camping in Florida. Early the following morning we "broke camp" and prepared for the return trip to Cedar Keys. Hoisting the anchor with a cheerful "heave yo," the sails of the Santa Maria soon filled, and we were homeward bound. We gave a farewell look by way of a parting salute to Piney Key, as it stood out bright and beautiful in the purple light of the morning:

The slanting sun shone white along the sand,  
Strewn with green sea-weeds and with crimson shells,  
Out of the ocean's dim mysterious cells,  
Jewelling all the broadskirts of the land.

Arriving at Cedar Keys after a pleasant voyage, we proceeded homeward over the same route by which we came.

The winter climate of Florida is not only healthful but delightful; in the summer there is danger of contracting fever and ague, and the yellow fever is an occasional visitor. The climatic advantages to the invalid are at the present time counterbalanced by the miserable food and discomforts of the hotels and boarding houses; there are undoubtedly exceptions to the last objection, but they are rare. The expenses of a three months trip are quite heavy and we could make a journey to Europe or California, of the same duration for the same cost, and live infinitely better in bed and board.

In an agricultural point of view Florida offers no inducements to the emigrant or settler that are not surpassed by many other sections of the country, whether quality of soil, facilities of transportation, accessibility to markets, or variety or capabilities of production are considered. An emi-



gration of enterprising and industrious people, in sufficient numbers so as to exercise a controlling influence, would in a few years effect a great change for the better, and place the State in the line of progress. The average Floridian of to-day understands only one thing, and that is "how *not* to do it." Emigration should be by colonies, and should include some mechanics, and be well provided with all necessary agricultural and mechanical implements and material, in order to be successful, and great care should be exercised in the selection of a location.

The trip to Florida, of which these "Rambles" afford a mere outline, was not devoid of scientific interest, and the results will be made known at some future time, either in the *NATURALIST* or some other appropriate publication.

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## THE NATURALIST IN CALIFORNIA.

BY J. G. COOPER, M. D.

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### NO. II.

*The Colorado Valley in winter.*—I arrived at Fort Mojave, after a journey of sixteen days from Los Angeles,\* on December 19th, 1860. This post is situated close to latitude 35°, where the boundary line of California strikes the river, and although on the Arizonian side, has, probably, no species of animals not also living on the west bank of the river, unless *Lepus callotis* be an exception. This, the Texan hare, I found common there, while *L. Californicus* is the prevalent, if not the only large species westward. The valley of the Colorado at this post is, probably, ten miles in width, and formed of a succession of gravelly terraces, or *mésas*, with a narrow sandy bottom intervening,

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\*Not Angelos, as printed before. Spanish, not Italian.